

Translation

PATENT COOPERATION TREATY

PCT/JP2003/012048



PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference H1856-01	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/JP2003/012048	International filing date (day/month/year) 22 September 2003 (22.09.2003)	Priority date (day/month/year) 20 September 2002 (20.09.2002)
International Patent Classification (IPC) or national classification and IPC G02B 27/42, 6/28, 5/18, G01J 3/18		
Applicant NIPPON SHEET GLASS COMPANY, LIMITED		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>3</u> sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising: a. <input type="checkbox"/> (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows: <input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items: <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application

Date of submission of the demand 04 February 2004 (04.02.2004)	Date of completion of this report 26 May 2004 (26.05.2004)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2003/012048

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language _____, which is language of a translation furnished for the purpose of:

- ☐ international search (under Rules 12.3 and 23.1(b))
☐ publication of the international application (under Rule 12.4)
☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

☒ The international application as originally filed/furnished

☐ the description:

pages _____, as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☐ the claims:

pages _____, as originally filed/furnished

pages* _____, as amended (together with any statement) under Article 19

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☐ the drawings:

pages _____, as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing (*specify*): _____

☐ any table(s) related to sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing (*specify*): _____

☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims		YES
	Claims	1-12	NO
Inventive step (IS)	Claims		YES
	Claims	1-12	NO
Industrial applicability (IA)	Claims	1-12	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

Document 1: JP, 56-26706, U (Mitsubishi Electric Corp.), 12 March, 1981. Full text (Family: none).
 Document 2: JP, 60-230608, A (Shimazu Corp.), 16 November, 1985. Full text (Family: none).
 Document 3: JP, 1-281411, A (Ricoh Co., Ltd.), 13 November, 1989. Full text (Family: none).

The inventions described in claims 1 through 12 do not appear to possess novelty based on documents 1, 2, and 3 cited in the ISR. The condition formulas described in claim 1: $d \geq a$, $g_v \geq a/\cos\phi$, $g_p \geq a$, $L \geq D/\Delta\phi$ are not disclosed in documents 1 to 3. However, documents 1 to 3 indicate that setting the effective diameter of the lens to $d \geq a$ by using the well-known fact that the increase in the quantity of collected light accompanies the increase in the lens size, setting the length of diffraction lattice to $g_v \geq a/\cos\phi$, $g_p \geq a$ based on the diameter of the optical beam because of a clear diffraction effect obtained if the diffraction lattice is set only to the portion that is illuminated with light, and also setting the distance between the diffraction lattice and the lens to $L \geq D/\Delta\phi$ by taking into account the difference between the diffraction angles and the physical outer diameter of the lens in order to guide the light with λ_1 and the light with λ_2 to the lens are the optimization operations that can be ordinarily implemented by a person skilled in the art.

The conditions represented by the formulas described in claims 2 to 8 are also mere optimization steps that can be ordinarily implemented by a person skilled in the art.